

**GOVERNMENT OF INDIA
OCEAN DEVELOPMENT
LOK SABHA**

UNSTARRED QUESTION NO:2270
ANSWERED ON:17.12.2003
EXPLOITATION OF OCEAN WEALTH
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Will the Minister of OCEAN DEVELOPMENT be pleased to state:

- (a) the number of Antarctic missions sent by the Government during the last two years; and
- (b) the outcome thereof ?

Answer

MINISTER OF HUMAN RESOURCES DEVELOPMENT, MINISTER OF SCIENCE AND TECHNOLOGY AND MINISTER OF OCEAN DEVELOPMENT (DR. MURLI MANOHAR JOSHI)

(a) India has sent two annual Scientific Expeditions namely the 21st and 22nd to Antarctica during 2001 and 2002. In addition a team was sent in November, 2003 to Maitri to conduct experiments on Total Solar Eclipse which occurred on 23rd/24th November, 2003.

(b) Apart from conducting the ongoing scientific programmes in Earth Science, Atmospheric Science, Meteorology, Biological and Environmental Science, following achievements have been made during these expeditions:

(i) The Ice-core drilling machine upgraded during 21st Expedition and deployed during 22nd expedition. The two ice cores drilled earlier totaling about 160 m length have been brought to NCAOR, Goa by the 22nd expedition, where Ice core lab is being established.

(ii) Till 22nd Expedition an area of more than 15,000 sq. m, lying between 15 degree and 5 degree E longitude near 'Maitri' has been geologically mapped.

(iii) During 20th Expedition, the surveillance limits on both sides of the Dakshin Gangotri Glacier were extended by nine line kms. to enhance the range of observation of ongoing glacial monitoring programme and during last two expeditions data on extended lines has been collected.

(iv) 300 NM of Passage Bathymetry, 500 NM of Seabed Survey and delineation of 120 NM of coastline, has been carried out.

(v) For the first time ADAPTIVE HF communication system for better communication was tested during 21st Expedition and during the last expedition HF and VHF communication systems were further upgraded.

(vi) Installation of Telemedicine facility at Maitri.

(vii) A new Digital Magnetometer was installed during 22nd Expedition for studying geomagnetic storms and up storm accurately.

(viii) A permanent environment monitoring lab has been established at Maitri.

(ix) In the mid night of November 23/24, 2003 a Total Solar Eclipse took place over the Indian Station 'Maitri' in Antarctica. A special team of astrophysicist was sent to conduct experiments on Shadow Bands, Corona and Thermal Inertia. Apart from normal phases of solar eclipse, it resulted in generation of extensive shadow-bands which are rare and occurred for a long duration. The multi-spectral coronal observations were dominated by low angle scattering specific to clean Antarctic atmosphere and low elevation of sun at the horizon. Analysis of this data would certainly bring out new results.